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Ministry of Health
Republic of Georgia

Epidemiology Bulletin

Introduction

With this inaugural issue, the Ministry of Health begins monthly publication of the ***Epidemiology Bulletin*** in Georgian and English. It will be distributed gratis to institutions and individuals, including private practitioners, who together comprise the health sector of today's Republic of Georgia. The dual intent is:

- to provide authoritative reliable information on currently important health topics, and
- to facilitate feedback to the health workers who are the source of our data.

In turn this will maximize the potential health benefit to our citizenry.

While it is quite evident from recent events that there is a trend towards improvement of the general situation in the Republic, much of what we had in the past was destroyed during the last few years. Among the many problems that have arisen: armed conflicts have caused massive displacement of whole populations; the full-time availability of piped water and electricity remains an elusive goal throughout our land; many are still forced to live without heat during winter, and the government cannot yet pay a living wage to its employees.

Under such conditions, incomplete or deficient information on the nation's health situation and its trends is expected, understandable and unavoidable.

Informing international donor agencies and non-governmental organizations of our priority needs, designing and evaluating interventions to reduce or eliminate known problems, and trying to anticipate possible future problems have all been difficult exercises. This publication should help with these necessary tasks.

Regular features of the ***Epidemiology Bulletin*** will include tables of notifiable diseases containing the most currently reported data; graphs, maps and analyses to assist in focussing our efforts where they will do the greatest good; and summaries of what is known about our important health problems. Public health issues such as major chronic diseases, information for health promotion and disease prevention will receive special emphasis.

As this is the first issue, and almost no information has been printed for several years, much space is given to the presentation of currently available data. While we are aware of serious inaccuracies in these data for many obvious reasons, this is all that we have and with this we must begin. On this foundation, with patience and through the cooperation of everyone, a modern health information system will be built in Georgia.

While the central Ministry of Health will provide the bulk of the material for this

Introduction - Continued

publication, unsolicited articles or timely reports of public health importance are always welcome and may be submitted for review and possible publication.

Except for protecting the right to privacy of our citizens, health data are now and shall remain public, no longer a state secret.

A word of caution is in order. Data are not information, though on the surface they appear so. What this means is that raw data (statistics, numbers of cases or deaths, etc.) can be misunderstood easily and must first be analyzed and interpreted by trained professionals, for example, epidemiologists, statisticians, demographers. Only then do data become information, information upon which we can plan and take action and which can be clearly and unambiguously communicated to each intended audience.

By reporting current health events promptly and openly acknowledging our problems as well as our successes, we will be able to establish effective collaboration which will then hopefully be reflected in improving the health status of our population.

Finally, this bulletin is made possible through a formal arrangement between the Republic of Georgia, through the Ministry of Health, and the United States of America, through the Agency for International Development (USAID) and the Centers for Disease Control and Prevention (CDC).

Epidemiologic Notes and Reports

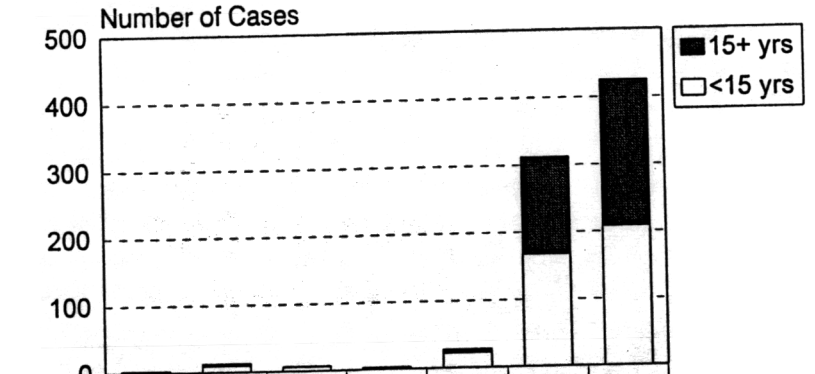
Epidemic Diphtheria

Since the end of 1993, a diphtheria outbreak has been taking place in Georgia. In 1994, 312 cases with 38 deaths were reported, with the highest case numbers coming from Ajara (163) and Tbilisi (84). In 1995, 425 cases were reported, with 44 deaths. Ajara reported 197 cases, Tbilisi reported 86 cases, and 142 cases were reported from other areas in 1995, indicating significant geographic spread. Cases have been occurring across all age groups, with the exception of people greater than 60 years of age. About 50% of the cases have been in children (14 years or below), but this age group has about 70% of the fatalities. Antitoxin has been in short supply, and at times there has been none.

The National Immunization Program was approved by the Cabinet of Ministers by Resolution #316, on May 18, 1994. Immunization of the whole adult population below age 60 with at least one dose of diphtheria toxoid vaccine (Td), plus the normally required 3 doses (DPT) and boosters (DT) for children, was deemed necessary to control the outbreak. With financial assistance from USAID and technical support from the United Nations Children's Fund (UNICEF), the World Health Organization (WHO) and others, it then became possible for the Ministry of Health to immunize this population. An immunization campaign was begun in July in Ajara, and has since been extended to the entire country.

Epidemic Diphtheria - Continued

Figure 1. Reported Cases of Diphtheria by Age Group
Republic of Georgia, 1989-1995



	1989	1990	1991	1992	1993	1994	1995
15+ yrs	2	4	1	0	6	145	217
<15 yrs	1	9	6	3	22	167	208

Reported by: L. Baidoshvili, National Immunization Program, Ministry of Health, and R. Tsiklauri, CDC/Tbilisi.

Editorial Note: Diphtheria is an acute bacterial disease of tonsils, pharynx, larynx, nose, occasionally of other mucous membranes or skin, and sometimes the conjunctivae or genitalia. The characteristic lesion is one or more patches of an adherent grey or whitish membrane with surrounding inflammation. This lesion is caused by the early and local effects of a specific cytotoxin produced by toxigenic strains of *Corynebacterium diphtheriae*. Presumptive diagnosis is based on observation of a grey or whitish membrane, especially if extending to the uvula and soft palate, in association with tonsillitis, pharyngitis or cervical lymphadenopathy, or a serosanguinous nasal discharge. In severe cases, there is marked swelling and edema of the neck. Inapparent infections outnumber clinical cases. Late effects of absorption of the toxin, appearing after 2-6 weeks, include cranial and peripheral motor and sensory nerve palsies and myocarditis (which may occur early), and are often severe. Case fatality rates of 5-10% for non cutaneous diphtheria have changed little in more than 50 years, despite aggressive effort at treatment. Prevention, through vaccination, is the best strategy.

The infectious agent is *Corynebacterium diphtheriae* of *gravis*, *mitis*, or *intermediu* biotype. Toxin production results when the bacteria are infected by corynebacteriophag

Epidemic Diphtheria - Continued

containing the gene *tox*. Non-toxigenic strains rarely produce local lesions.

The reservoir is man and the disease is usually transmitted through contact with a patient or carrier. The incubation period is 2-5 days, occasionally longer. The period of communicability is usually 2 weeks or less, and seldom more than 4 weeks. Antibiotic therapy promptly ends the shedding of virulent bacteria. Susceptibility is general and recovery from a clinical attack is not always followed by lasting immunity. Prolonged active immunity can be reliably induced through the use of toxoid vaccine.

Although diphtheria was controlled for approximately 30 years after the institution of childhood vaccination with diphtheria toxoid in the late 1950's, epidemic diphtheria has reemerged in the New Independent States (NIS) of the former Soviet Union. The epidemic began in 1990 in the Russian Federation, and spread to Ukraine in 1991 and, during 1993-1994, to 12 of the 13 remaining NIS Reported cases of diphtheria in the NIS increased from 839 in 1989 to 47,826 in 1994 (*1*).

Diphtheria toxoid vaccine protects from disease by conferring specific immunity to the toxin elaborated by toxigenic strains of *Corynebacterium diphtheriae*. It does not protect from colonization by the organism.

Routine immunization for diphtheria began in Georgia in 1958. With the advent of routine childhood immunization, the incidence of diphtheria dropped dramatically, and diphtheria virtually disappeared from Georgia until the late 1980's. The number of reported cases of diphtheria decreased from a high of 3,160 cases in 1958 to 0 cases in 1973. After 1973, 0-3 cases per year were reported until 1987. In 1988 and 1990 the number of cases of diphtheria increased to 13. This was followed by an abrupt increase in the number of diphtheria cases to 28 in 1993 and 312 cases in 1994. Deaths due to diphtheria also increased from 0-3 per year during the years 1963-1993 to 38 in 1994.

In 1989-1994, the majority of diphtheria cases occurred in persons over 5 years of age, and in 1994, 47% of cases occurred in persons over 14 years of age.

Of the 312 diphtheria cases reported in 1994, less than 25% were diagnosed or hospitalized within the first 2 days of illness, and 30% were diagnosed or hospitalized 6 or more days after the onset of illness. Ninety four per cent of all persons with diphtheria received diphtheria antitoxin.

In 1994, the reference laboratory in Tbilisi identified 65 positive diphtheria cultures. Forty-three were found to be toxigenic; 40 were biotype *mitis* and 3 were *gravis*.

Information on diphtheria had been published monthly in a Ministry of Health bulletin, but publication stopped in 1993. Since then, there has been no regular feedback to raions, polyclinics, ambulatory clinics, health care providers, or other governmental organizations regarding the incidence of diphtheria in the Republic.

By impacting the availability and use of toxoid vaccine, the following factors have contributed to the reemergence and spread of diphtheria in the Republic of Georgia: severe socioeconomic conditions in the country, interruption of vaccine supplies for preventive immunization, war in Abkhazeti, internally displaced people and extensive migration in and out of the country, doubts cast on the need for immunization by mass media and practitioners in the former Soviet Union, and a general decrease of interest

Epidemic Diphtheria - Continued

in the disease, causing low immunization coverage of children and reduction of the diphtheria toxin immunity level in the population.

Figure 2. Diphtheria Toxoid Vaccination, Progress by Region Republic of Georgia, December 1995-January 1996

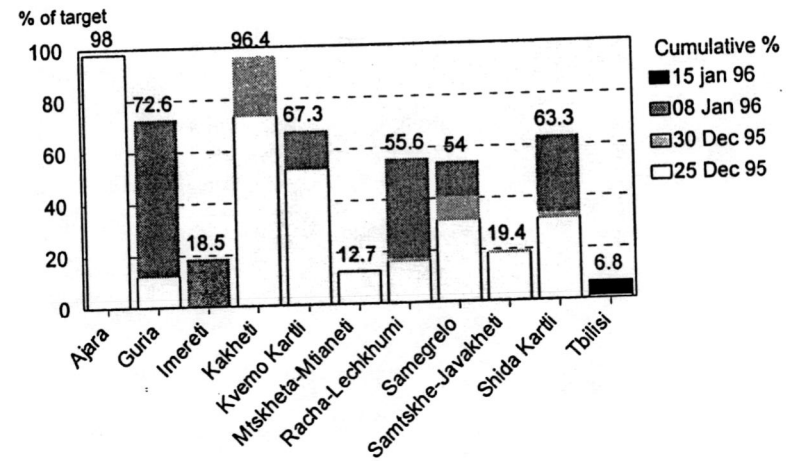
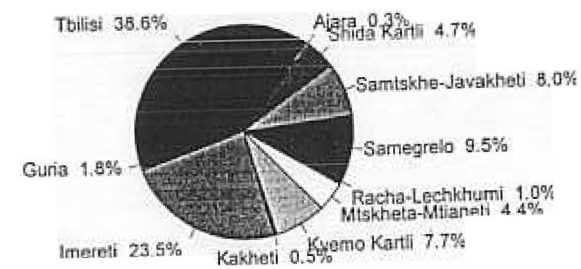


Figure 3. Unvaccinated Population as of 15 Jan 96 =1,828,945 by Region and Per Cent of Total



Epidemic Diphtheria - Continued

While it is evident that vaccination is being performed almost everywhere, it is also clear that much work yet remains before we can consider the population protected and the vaccination campaign a success. Only 44.7% of the target population has been vaccinated to date. While winter conditions make vaccination difficult in remote and mountainous areas, almost two-thirds of the 1.8 million persons yet to be vaccinated reside in two easily accessible regions: Tbilisi and Imereti.

Reference

1. CDC. Diphtheria Epidemic - New Independent States of the Former Soviet Union, MMWR 1995;44:177-181.

Update: Influenza-Like Illness - Republic of Georgia

Though Georgia has not yet organized an influenza reporting system, it is clear from a variety of informal sources that a major influenza epidemic, currently reported to be affecting the Russian Federation, Ukraine, much of the rest of Europe and North America, has arrived here as well. Absences from work and school throughout the Republic increased rapidly during December, 1995 and have continued their rise in the first 2 weeks of 1996.

This is anecdotal reporting, without hard numbers to back it up. However, that an epidemic of influenza-like illness (ILI) is sweeping this land and affecting all ages and both sexes is indisputable and obvious. We would like to be able to report the geographic areas of highest incidence, age-specific attack rates and mortality rates, as well as the identification of our specific virus or viruses. Sadly, none of this is possible today.

Nevertheless, it will serve a public health purpose to review what is known about the current influenza epidemic documented elsewhere, so as to assist our medical care colleagues and the general public with beneficial information.

What is occurring elsewhere in the Northern Hemisphere this winter is largely influenza type A. In the USA, from October 1-December 16, 1995, influenza viruses were isolated in 45 states (90%) and Washington, DC (*1*). Of the 296 influenza virus isolates reported by WHO collaborating laboratories in the USA, 293 (99.9%) were type A and 3 (0.1%) were type B. Of the type A isolates, 140 (48%) were not subtyped. Of the 153 subtyped viruses reported, 91 (59%) were type A (H1N1), and 62 (41%) were type A (H3N2). The number of states reporting more than sporadic ILI increased each week from the week ending November 18 (4 states) through the week ending December 16 (29 states).

Similar situations currently prevail in other affected parts of the hemisphere.

Editorial Note: The term ILI is used because it has not been confirmed that the disease we are experiencing is caused by influenza virus type A, though this is most probably the case because of what is going on elsewhere. Also, very many other viruses result in

Influenza-Like Illness - Continued

influenza-like syndromes, though they do not carry the excess mortality that is attributable to influenza type A.

Human influenza type A(H1N1) viruses circulated worldwide from approximately 1920 to 1957, when they disappeared and were replaced by a new type A strain, type A (H2N2). In 1977, type A (H1N1) viruses reemerged and, since then, have cocirculated with type A(H3N2) viruses. All human influenza type A viruses undergo genetic changes. Small changes are referred to as drift; large changes as shift.

A prevailing type may undergo drift in incremental stages for several years, or a shift may occur, or a new type may appear. The major public health consequence is that a large number of persons who experienced previous strains and who are protected from these older strains because of circulating antibodies suddenly become susceptible again.

Antiviral drugs (amantadine and rimantadine) are effective against all known human influenza type A strains. However they are of limited public health use because of their cost and because they must be taken before exposure, meaning that one would have to keep taking them daily throughout the many weeks of a flu season. Vaccines can be effective, but must be prepared well in advance, using the latest epidemiologic and laboratory information to formulate an optimal mix of antigens most likely to be circulating in the ensuing flu season. Also, influenza vaccine must be injected at least two weeks prior to exposure to have the desired protective effect.

For these reasons, both technical and pragmatic, antiviral drugs and influenza vaccines are of limited public health use, mainly to protect especially vulnerable populations (e.g. the elderly, chronically ill, and nursing home residents) from the excess mortality that accompanies influenza. More than 95% of influenza's excess mortality is in these high risk groups. For an otherwise healthy individual the best prophylaxis against serious influenza in the future is to repeatedly and successively acquire protective antibodies to whatever strains are circulating, maintaining the most current immunity.

Reference

1. CDC. Update Influenza Activity - United States, 1995-96 Season, MMWR 1996;44:937-9.

Hypertensive Vascular Disease

With the emergence of independent Georgia, it became possible, at least in principle to set our own disease control priorities and design our own interventions. One clear priority activity will involve arterial hypertension and the whole range of conditions that arise from it, herein referred to as hypertensive vascular disease (HVD).

In order to begin planning for HVD control, existing relevant data were sought from the Committeefor Social and Economic Information, a government unit that collects and compiles statistics across all sectors, reporting directly to the Cabinet of Ministers. A large variety of HVD relevant and specific data were requested in this search.

Only the data summarized in the following two tables could be obtained, and for th

Hypertensive Vascular Disease, Continued

purposes of rate calculations, the mean population of the Republic of Georgia during the period 1991-1994 is considered to be 5,458,033.

Table 1. Registered Patients[1] and Enrolled Patients[2] with Hypertension, Ischemic Disease with Hypertension, Cerebrovascular Disease with Hypertension, 1991-1994.

	Hypertensive Disease	Hypertensive Disease plus Ischemia	Cerebrovascular Disease
1991			
Registered	169,452	87,720	12,292
Newly Diagnosed	10,524	7,313	1,699
Enrolled	93,301	69,241	93,301
1992			
Registered	86,510	55,987	7,565
Newly Diagnosed	5,882	3,940	984
Enrolled	62,355	49,566	5,927
1993			
Registered	92,607	57,614	7,927
Newly Diagnosed	5,996	3,148	857
Enrolled	69,335	50,131	6,193
1994			
Registered	84,133	54,429	7,282
Newly Diagnosed	5,069	5,471	926
Enrolled	64,773	45,358	5,705

[1]*Registered Patients* include all persons with any of the above conditions who have applied for treatment at any government health facility during any given year; newly diagnosed patients are a subset of the registered patients.

[2]*Enrolled Patients* include only those patients who have been under regular observation or follow up at the end of any given year.

Table 2. Deaths From Stroke, 1990-1992

Age Group	1990	1991	1992
0-64	15,365	16,740	23,494
65-69	262	702	732
>69	3,581	7,005	7,195

Reported by: B. Tsinamdzgvrishvili, Z. Pagava, M. Babunashvili, and M. Tsintsadze, Republican Hypertension Center, Ministry of Health, and L. Sturua, CDC/Tbilisi. *The Republican Hypertension Center was established in 1994 with responsibility for coordinating scientific and organizational activities in Georgia regarding the problems of hypertension.*

Editorial Note: An elevated arterial pressure is one of the most important public health problems in developed countries. HVD is common, often asymptomatic, readily detectable, usually easily treatable, and frequently leads to lethal complications if left untreated. Although a comprehensive review of the epidemiology of HVD in Georgia will be published in a later issue, this article introduces the subject as evidence of the significance of this and other major chronic diseases.

Most of the traditional health statistics of the former Soviet Union dealt with infectious disease, were collected and compiled through the various Republican Sanitary Epidemiological Services and were supplemented by specialized institutes. This was separate from the system of dispensaries, polyclinics, and hospitals of all types , again supplemented by specialized institutes, that in aggregate made up the curative medical services. Data on chronic disease came from the latter group. All of these data were sent to a statistical unit of the Ministry of Health, which in turn sent data to the State Statistical Center. The latter, with access to the data from all sectors, including a direct vital statistics source, is regarded as the best place to get the most complete data.

These data from the State Statistical Center are based exclusively on those patients who chose to register, and the number dropped approximately 50% from 1991 to 1994. When compared with other data, they give an incomplete picture at best, as the rates are too low to be credible. According to data from the WHO MONICA project (*1*), the prevalence of hypertension is 9-20% among adults and 44-60% among the elderly. Data from the Institute of Cardiology (*2*) are also quite different, showing the prevalence of hypertension among employees of some enterprises as 14.5% in the 30-34 age group, 21.5% in the 35-39 age group, 22.7% in the 40-44 age group, 36% in the 45-49 age group and 32% in the 50-54 age group. The conclusion must be that there are insufficient data to analyze the true prevalence of HVD and its related diseases. The existing data must be supplemented with surveys and special studies, such as prospective studies in selected populations.

Studies were started on the prevalence of HVD, clinical symptoms and their associated provoking factors in the Center of Clinical and Experimental Cardiology in the 1940's. Since then, a classification scheme for arterial hypertension and hypertensive disease was worked out and published (*3*). Much data were collected regarding the prevalence of hypertension, its initial and latent forms, as well as for juvenile hypertension, and many of these studies have also been published (*4,5*).

Currently, there are many factors present in Georgia which should be beneficial for reducing the development of HVD (e.g., reforms in health care, long-standing traditions of research in cardiology, Georgian textbooks, the Republican Center of Cardiology, new concepts for identification, evaluation and treatment of hypertension). There are also some that inhibit this, such as lack of complete and standard information plus many methodological and organizational problems.

Hypertensive Vascular Disease - Continued

Based on the above, the reliable assessment of hypertension prevalence should be the first step toward HVD control in the country, as this is the parameter upon which should be based the whole range of standards to be used for future planning and designing of the health system and its components.

References

1. MacGreen F, Reggini I, Epidemiology of Hypertension in Europe, Euro Heart J 1992, 13 (suppl 14):27-34.
2. Burkadze N, Matsaberidze B, Skhirtladze L, Sadradze N, Specialty of Secondary Prevention of Arterial Hypertension in the Medical-Sanitary Parts of Industrial Enterprises, Rep Coll Sci Works: Prevention of Hypertension, 29-33, Gorky: (Rus)1987.
3. Tsinamdzgvrishvili M, Matters of Classification of Hypertension, Georgian Academy of Science, Tbilisi: (Rus)1952.
4. Tsinamdzgvrishvili M, Problems of Essential Hypertension in Georgia, Tbilisi: (Geo)1947.
5. Chochua N, Lomouri A, Khadjidis N, Salt Use and Tasting Sense and Levels of Arterial Pressure Among Children and Juveniles: Important Questions of Cardiology 55-59, Tbilisi: (Rus)1988.

Notifiable Diseases

Table I. Notifiable Diseases, 1980-1994. Reported Cases, and Rates per 100,000 Population

Year	Acute Respiratory Infection		Anthrax		Ascariasis		Brucellosis		Cholera		Colitis/Enteritis all causes		Diarrhea with Toxic Infection	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rates	Cases	Rate	Cases	Rate
1980	398,204	7,875	15	0.3			85	1.7	0		631	12.5	1,514	29.9
	549,871	10,858		0.3	107,869		147	2.9	0		580	11.5	1,454	28.7
	484,568	9,509	2	0.0	94,443	1,901	191	3.7	0		397	7.8	1,185	23.3
	534,486		5	0.1	87,515	1,490	216	4.2		0.1	560	10.9	1,206	23.5
1984	581,804	11,269	6	0.1	87,712	1,609	163	3.2	3†	0.1	634	12.2	1,259	24.4
1985	545,275	10,495	3	0.1	71,409	1,499	203	3.9	0		733	14.1	12,904	248.4
1986	667,000	12,751	5	0.1	66,892	1,275	202	3.9	0		901	17.2	14,530	277.8
1987	585,750	11,139	0	0.0	54,323	1,114	232		0		1,074	20.4	13,260	202.2
1988	628,019	11,679	6	0.1	48,709	779	207	3.9	2†	0.0	1,295			257.1
1989	535,014	9,897	22	0.4	30,726	600	217	4.0			1,249	23.1	10,799	199.8
	454,776	8,401	0		35,957		175	3.2	0		1,075	19.9	11,027	203.7
1991	382,018	7,048	13	0.2	30,800	568	240	4.4	1†	0.0	982	18.1	11,311	208.0
1992	280,867	5,182	37	0.7	17,633	325	180	3.3	5†	0.1	659	12.2	6,362	117.4
1993	235,150	4,338	1	0.0	14,339	265	87	1.6	8†	0.2	603	11.1	4,937	91.1
1994	139,178	2,555	8	0.1			155	2.9	1†	0.0	646	11.9		72.5

Table I. (Cont'd.) Notifiable Diseases, 1980-1994. Reported Cases, and Rates per 100,000 Population

Year	Diphtheria		Diphtheria carriers		Dysentery all causes		Enterobiasis		Gonococcal Infections		Hemorrhagic Fever all causes	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rates	Cases	Rates	Cases	Rate
1980	2	0.0	2	0.0	3,155	62.4			2,366	46.9		
	0		0		3,779	74.6			3,051	60.2		
1982	0		0		2,689	52.7			3,534	69.6		
	0		5	0.	3,127	60.9			3,590	69.9	1	0.0
	3	0.	11	0.2	3,158	61.2			3,650	71.1	2	0.0
		0.0	24	0.5	3,525	67.8			3,968	76.6		0.0
	2	0.0	0		3,491	66.7			5,869	112.5	31	0.6
1987	8	0.2	4	0.1	2,794	53.2			5,045	96.2	2	0.0
1988	13	0.2	6	0.1	2,883	53.6			4,014	76.	3	0.1
1989	3	0.1	5	0.1	1,976	36.5			3,259	61.8	1	0.0
1990	13	0.2	10	0.2	1,790	33.1	44,589	823.6	2,644	48.8	1	0.0
1991	7	0.1	16	0.3	1,770	32.9	49,154	906.9	2,261	41.6		
1992	3	0.	0		1,363	25.1	28,400	523.9	1,809	33.4		
1993	28	0.5	32	0.6	1,225	22.6	21,809	402.3	,562	28.9		
1994	312	5.7	10	0.2	1,188	21.8			1,124	21.3		

Table I. (Cont'd.) Notifiable Diseases, 1980-1994. Reported Cases, and Rates per 100,000 Population

Year	Hepatitis all viral		Hepatitis A		Hepatitis B		HIV Infection		HIV/AIDS		Hymenolepiasis		Influenza	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rates	Cases	Rate
1980	16,109	318.7	15,386	304.7	723	14.3	★		★				104,513	2,067
1981	13,270	262.0	12,453	246.1	817	16.1	★		★				202,372	3,996
1982	15,601	306.2	14,813	290.7	788	15.5	★		★				54,499	1,070
1983	16,480	321.3	15,402	300.2	1,078	21.0	★		★				47,038	917
1984	12,790	247.7	11,577	224.4	1,213	23.5	★		★				187,735	3,636
1985	13,797	265.5	12,084	232.6	1,713	33.0	★		★				19,272	2,296
1986	17,207	328.9	15,230	291.2	1,977	37.8	0		0				138,952	2,656
1987	16,102	306.2	13,797	262.3	2,305	42.6	4†	0.1	1†	0.0			63,993	837
1988	11,188	208.1	8,731	162.4	2,457	43.7	0		0				159,487	2,966
1989	12,231	226.2	10,013	185.5	2,218	41.0	0		1	0.0			115,678	2,140
1990	12,865	237.6	10,383	191.8	2,482	45.9	2	0.0	1	0.0	6	0.2	73,836	1,364
1991	9,660	178.4	7,764	142.9	1,995	37.1	1	0.0	0		4	0.1	50,500	932
1992	8,058	148.7	6,343	117.0	1,715	31.6	6	0.1	0		2	0.0	20,346	375
1993	7,024	129.6	5,576	102.9	1,448	26.7	0		0		6	0.1	32,089	592
1994	6,971	128.0	5,958	109.4	,013	18.6	1	0.0	0				7,638	140

Table I. (Cont'd.) Notifiable Diseases, 1980-1994. Reported Cases, and Rates per 100,000 Population

Year	Legionellosis		Leptospirosis		Malaria		Malaria carriers		Measles		Meningococcal infections, all		Meningococcal septicemia	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
1980	★				3	0.1	0		2,685	53.1	55	1.1	0	
1981	★		2	0.0	3	0.1	0		3,950	78.0	98	.9	2	
1982	★				6	0.1	0		693	13.6	69	1.4	3	0.1
	★				14	0.3	1	0.0	2,604	50.8	55	1.1	0	
1984	★				21	0.4	0		2,034	39.4	54	1.0	0	
	★				11	0.2	0		529	10.2	46	0.9	2	0.0
	★		21	0.4	9	0.2	0		586	11.2	65	1.2	0	
	★		2	0.0	9	0.2	0		1,576	29.3	61	1.2	3	0.1
	105	2.2	1	0.0	8	0.2	0		1,913	35.6	47	0.9	1	0.0
	8	0.2	2	0.0	3	0.1	0		159	2.9	72	1.3	9	0.2
	10	0.2	1	0.0		0.0	0		362	6.7	62	1.2	1	0.0
	28	0.5	4	0.1	2	0.0	0		352	6.5	45	0.8	0	
	8	0.2			1	0.0	0		115	2.1	25	0.5	0	
1993	2	0.0			0	0.0	0		408	7.5	54	1.0	0	
1994					1	0.0	0		723	13.3	19	0.3	0	

Table I. (Cont'd.) Notifiable Diseases, 1980-1994. Reported Cases, and Rates per 100,000 Population

Year	Mononucleosis, Infectious		Mumps		Paratyphoid A, B, C		Pertussis		Plague		Poliomyelitis	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Case	Rate
1980			5,464	108.1	61	1.2	466	9.2	0		5	0.1
1981			9,504	187.7	38	0.8	441	8.7	0		18	0.4
1982			6,630	130.1	29	0.6	426	8.1	0		2	0.0
1983			1,330	25.3	20	0.4	331	6.5	0		8	0.2
1984			757	14.7	16	0.3	434	8.4	0		3	0.1
1985			1,672	32.2	25	0.5	205	3.9	0		5	0.1
1986			3,216	61.5	9	0.2	461	8.8	0		3	0.1
1987			3,265	62.1	25	0.5	275	5.2	0		7	0.1
1988			1,932	35.9	14	0.3	322	6.0	0		0	
1989			975	18.0	9	0.2	316	5.9	0		2	0.0
1990	8	0.1	963	17.8	3	0.0	394	7.3	0		31	0.6
1991	9	0.2	893	16.4		0.0	335	6.2	0		6	0.1
1992			260	4.8	8	0.2	148	2.7	0		0	
1993	5	0.1	292	5.4	1	0.0	272	5.0	0		0	
1994			119	2.2			308	5.7	0		0	

Table I. (Cont'd.) Notifiable Diseases, 1980-1994. Reported Cases, and Rates per 100,000 Population

Year	Rabies		Rickettsial Infections		Rotaviral Infection		Rubella		Salmonelloses, Other		Scarlet Fever	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
1980	4	0.1	1	0.0	★		1,861	36.8	1,921	38.0	827	16.4
1981	4	0.1			★		2,228	44.0	,722	34.0	727	14.4
1982	0				★		2,835	55.6	1,483	29.1	910	17.9
1983	5	0.1	1	0.0	★		3,072	59.9	,638	31.9	893	17.4
1984	0				145		1,656	32.1	1,466	28.4	1,007	19.5
1985	2	0.0			120	2.1	5,696	109.6	1,105	21.3	1,183	22.8
1986	2	0.0	5	0.1	105	2.0	3,165	60.5	1,046	20.0	1,025	19.8
1987	2	0.0			90	1.8	2,050	39.0	1,003	19.1	1,353	25.7
1988	5	0.1	5	0.1	102	2.0	4,189	77.9	1,197	22.3	1,176	21.9
1989	4	0.1	5	0.1	115	2.1	1,609	29.9	1,062	19.7	638	11.8
1990	0				142	2.6	455	8.4	885	18.7	463	8.6
1991		0.0	1	0.0	160	2.7	602	11.1	724	13.4	367	6.8
1992	8	0.2			94	1.7	254	4.7	364	6.7	141	2.6
1993	4	0.1			102	1.8	801	16.1	312	5.8	153	2.8
1994	9	0.2					175	3.2	172	3.2	153	2.8

Table I. (Cont'd.) Notifiable Diseases, 1980-1994. Reported Cases, and Rates per 100,000 Population

Year	*Shigella flexneri*		*Shigella sonnei*		Syphilis		Tetanus		Trichinellosis		Trichocephaliasis	
	Cases	Rate	Cases	Rate	Cases	Rates	Cases	Rate	Cases	Rates	Cases	Rates
	838	16.6	262	5.2	1,192	23.6	8	0.2	9	0.2		
1981	907	17.9	722	14.3	1,055	20.2	6	0.1	12	0.3		
	792	15.5	247	4.9	996	19.6	6	0.1	13	0.3		
1983	1,039	20.3	515	10.1	986	19.2	8	0.2	14	0.3		
1984	1,049	20.3	390	7.5	919	17.9	14	0.3	17	0.3		
1985	,094	21.1	714	13.7	890	17.1	8	0.2	48	0.9		
1986	1,144	21.9	550	10.5	1,122	21.5	9	0.2	65	1.2		
1987	1,026	19.5	303	6.8	1,341	25.6	6	0.1	158	2.9		
1988	742	13.8	920	17.	1,122	21.2	6	0.	121	2.		
1989	661	12.2	351	6.5	824	15.6	8	0.2	93	1.7		
1990	475	8.7	429	7.9	676	12.5	4	0.1	188	3.5	26,989	495.7
1991	578	10.7	285	5.4	725	13.4	2	0.0	249	4.6	22,975	423.9
1992	456	8.4	174	3.2	730	13.5	3	0.1	352	6.5	8,956	165.2
1993	442	8.2	218	4.0	653	12.	5	0.1	157	2.9	9,886	182.4
1994	399	7.3	90	1.7	760	14.5			167	2.9		

Table I. (Cont'd.) Notifiable Diseases, 1980-1994. Reported Cases, and Rates per 100,000 Population

Year	Tuberculosis♦		Tularemia		Typhoid		Typhus		Varicella		Yersiniosis	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
1980					258	5.1	0		5,991	118.5	★	
					514	10.1	0		7,530	148.7	★	
	9,816	188.7			276	5.4	0		10,724	210.5	★	
	9,350	187.0			218	4.3	0		10,399	202.7	★	
	8,870	168.6	277	5.4	189	3.7	0		7,520	145.7	8	0.2
	8,602	165.4			275	5.3	0		9,304	179.1	11	0.2
1986	8,187	157.4			166	3.2	0		9,925	189.7	27	0.6
1987	7,953	152.9			95	1.8	0		13,894	264.2	16	0.3
1988	8,000	153.9			218	4.1	0		10,712	199.2	10	0.2
1989	7,815	150.3			66	1.2	0		7,286	134.2	6	0.1
1990	7,631	146.7			36	0.6	0		6,908	127.6	7	0.1
1991	7,632	146.7			47	0.9	0		3,886	71.7	12	0.2
	10,700	214.0			35	0.6	0		3,319	61.2		
	12,310	246.3			30	0.6	0		1,626	30.0		
1994	14,410	288.2			20	0.4	0		827	15.2		

Ministry of Health Reporting Units

The following list of reporting units is provided for future reference. It reflects reality and is a mixture of districts and cities that are expected to report on a regular basis to the Center for Health Statistics and Information, Department of Public Health, Ministry of Health

1
2 Adigeni
3 Akhalgori
4 Akhalkalaki
5 Akhaltsikhe
6 Akhmeta
7 Ambrolauri
8 Aspindza
9 Baghdadi
10 Batumi
11 Bolnisi
12 Borjomi
13 Chiatura
14 Chkhorotsku
15 Chokhatauri
16 Dedoplis Tskaro
17 Dmanisi
18 Dusheti
19 Gagra
20 Gali
21 C[illegible]
22 Gori
23 Gudauta
24 Gulripshi
25 Gurjaani
26 Java
27 [illegible]
28 Kaspi
29 Kazbegi
30 Keda
31 Kharagauli
32 Khashuri
33 Khelvachauri
34 Khobi
35 Khoni
36 Khulo
37 Kobuleti
38 Kutaisi
39 Kvareli
40 Lagodekhi
41 Lanchkhuti
42 Lentekhi
43 Marneuli
44 Martvili
45 Mestia
46 Mtskheta
47 Ninotsminda
48 Ochamchire
49 Oni
50 Ozurgeti
51 Poti
52 Rustavi
53 Sachkhere
54 Sagarejo
55 Samtredia
56 Senaki
57 Shuakhevi
58 Sighnaghi
59 Sukhumi
60 Tbilisi
61 Telavi
62 Terjola
63 Tetri Tskaro
64 Tianeti
65 Tkibuli
66 Tsageri
67 Tsalenjikha
68 Tsalka
69 Tskaltubo
70 Tskhinvali
71 Vani
72 Zestaponi
73 Zugdidi

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